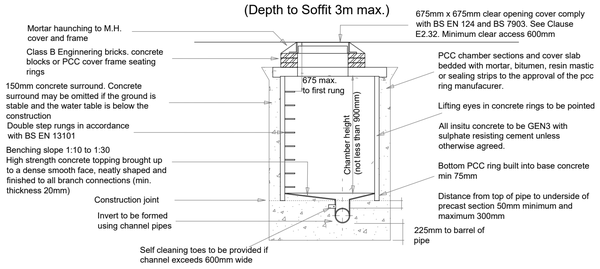
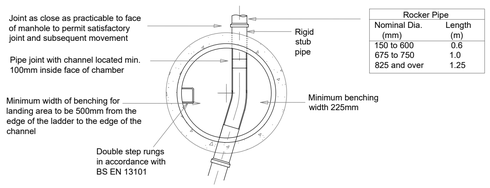
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TYPICAL MANHOLE DETAIL TYPE 2

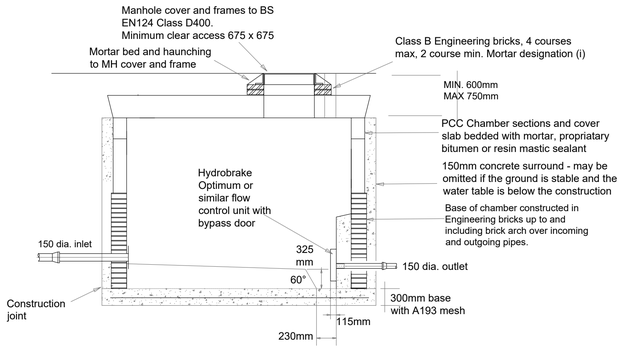
(Depth to Soffit 3m max.)

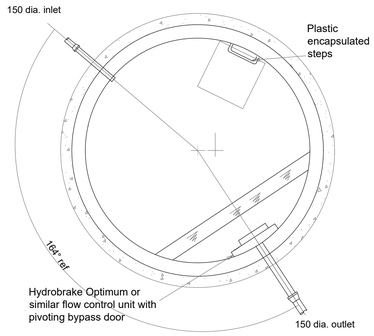




Rocker Pipe	
Nominal Dia. (mm)	Length (m)
150 to 600	0.6
675 to 750	1.0
825 and over	1.25

FLOW CONTROL CHAMBER S2





Flow control unit and drain valve installed in accordance with manufacturers instructions.
Invert level as pipe invert level.

FLOW CONTROL

Chamber S2 Hydro-brake MD SHE-0081-3200-1280-3200 flow control unit or similar (design flow 3.2l/s design head 1.28m)

Hydro International tel: 01275 337923.

Warning signs are required in the up flow control chamber and in the manhole immediately upstream and downstream.

The signs are to have 40mm high red lettering on a white plastic base. Base dimensions approx 300 x 300 x 6mm

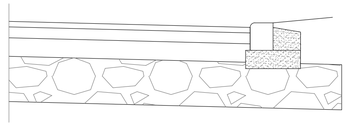
Signs to be mounted on a removable safety grid, available from manhole cover manufacturer.

Sign in this chamber 'CAUTION - HYDROBRAKE LOCATED HERE'

Sign in upstream manhole 'CAUTION- HYDOBRAKE DOWNSTREAM'

Sign in downstream manhole 'CAUTION- HYDROBRAKE UPSTREAM'

Private Road Construction

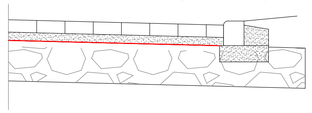


Private Road Construction

30mm Surface Course - 10mm SuperDrainasphalt or similar.
60mm Binder Course - 20mm SuperDrainasphalt or similar.
110mm Base Course - 32mm SuperDrainasphalt or similar.
250mm MOT Type 1 Sub-base. (DTp Specification Clause 803).

Total Construction Thickness 450mm

Permeable Block Paving Driveway Construction



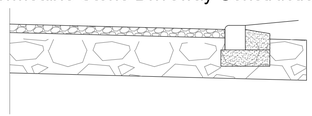
Permeable Block Paved Driveway Construction

80mm Marshalls Brindle Porous Block Paving or similar approved
30mm Thickness of 3-6mm grit bedding
Terram 1000 Geomembrane
225mm Sub-base - less than 5mm fines (DTp Specification Clause 803).

Total Construction Thickness 335mm

Note:
Terram 1000 Geomembrane to be laid between grit bedding and sub-base.

Permeable Stone Driveway Construction



Permeable Stone Driveway Construction

30mm Thick - 10 to 14mm Angular Gravel
225mm Sub-base - less than 5mm fines (DTp Specification Clause 803).

Total Construction Thickness 255mm

NOTES

1. All drainage works are to be constructed in accordance with Sewers for Adoption Design & Construction Guide 7th Edition

2. Manhole Construction Notes

Covers and frames to BS EN124:1994 - as supplemented to BS 7903:1997 (Specification and use of gully tops and manhole covers within the Highway)

Mortar for bedding and haunching of manhole covers and frames to be cement/sand 1:3 mix to BS-EN 998-1 and BS-EN 998-2

Bricks to be clay Class B solid engineering bricks to BS 3921:1985 Frost resistant category F.

Precast concrete cover slabs, reducing slabs and chamber rings to BS 5911: Part 200

Manhole steps to BS EN 13101:2002
(Previous specification BS1247 - withdrawn June 2004)

Manhole ladders, galvanised mild steeel to BS 4211 or stainless steel fabricated from grade 316S31 steel complying with BS 970:Part 1.

Wearing screed (high strength concrete topping) to BS8204 - Part 2:2003
Mix proportions bt weight - 1 part cement, 1 part natural sand and two parts single size course aggregate.

Concrete to BS EN 206-1:2000 and BS 8500 - 1:2002 20mm max aggregate, slump class S2 - target 70mm. Any voids formed below the manhole structure to be backfilled with concrete. Filling, blindings and soft spots concrete mix GEN0, all other applications GEN3.

Construction joints should break joint with those of the chamber or shaft section by at least 150mm.

3. Figured dimensions shall take preference to scaling with any errors and omissions reported to Woodsyde Development Limited.

4. The contractor should check all heights, sizes and dimensions on-site befor works commence and any errors should be reported to Woodsyde Development Limited .

5. The drawing has been designed to comply with the requirements of Sewers For Adoption 7th Edition.

6. All surface water sewers shall be UPVC Polypipe Polysewer unless otherwise stated.

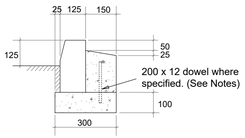
7. All foul water sewers shall be UPVC Polypipe Polysewer unless otherwise states.

8. All Manhole covers to be a minimum of 675mm x 675mm to comply with Hafren Dyfrdwy Ltd current health and safety standards.

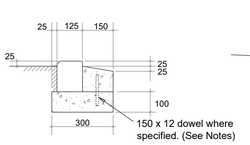
9. Pre cast concrete manhole rings will not be cut under any circumstance.

Notes:

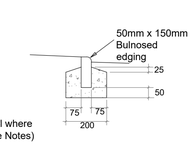
- All Precast concrete kerbs and edgings to BS7263-3:2001
- Concrete bed and haunching ST1 Mix to BS EN 206-1:2002 and BS8500 in accordance with SHWW Clause 2602
- Kerbs and edgings may be laid directly on a fresh concrete bed within two hours of mixing, then haunching applied. Alternatively, when concrete bed has hardened, kerbs may be laid on a mortar bed.
- Mortar to Clause 2404 designation (i), mortar to be 10 to 40mm thickness.
- Concrete bed to kerbs and edginds to rest on or within sub-base layer.
- Dowel bars are specified when small element edging is used. They are to be bedded at 500mm centres.



Half Battered Kerb: Type HB2
(255mm x 125mm)



Bullnosed Kerb: Type BN
(150mm x 125mm)



Bullnosed Edging
Kerb: Type EBN

BEDDING AND SIDEFILL MATERIAL FOR FLEXIBLE PIPES

Nominal Size of Pipe (mm)	Nominal Max Particle Size (mm)	Maximum CF Value	Materials Specified in British Standard
100	10	0.15	10mm nominal single-size
Over 100 to 150	15	0.15	10 or 14mm nominal single size or 14 - 5mm grade
Over 150 to 300	20	0.15	10, 14 or 20mm nominal single-size or 14 - 5mm graded or 20-5mm graded.

The Table (A2 from WIS 4-08-02) shows specification for processed granular material. Processed granular materials may be included aggregates to BS882, air-cooled blast furance slag to BS 1047 and lightweight aggregates to BS 3797.

PIPE BEDDING NOTES - RIGID PIPES

Bc = External pipe diameter
W = Trench width (Bc + 300mm min, Bc + 600 max)

'Y' dimension - For pipes upto 600 mm diameter, Y = 100mm over and under pipe increases to 1/6 Bc or 100mm under barrels & 50mm min. under sockets whichever is grater (400mm max.)
In rock etc use 1/4 Bc & 150mm min. under sockets. (400mm Max.)

Bedding and sidefill material shall be placed and compacted in layers not exceeding 150mm before compaction, to a finished thickness of 300mm above the crown of the pipe.

Subsequent backfilling shall be deposited in layers not exceeding 225mm and fully compacted.

Selected fill should be readily compactible, and should not contain stones larger than 40mm, lumps of clay over 75mm, timber, frozen material, vegetable matter or foreign matter.

Refer to table for specification for granular material.

PIPE BEDDING NOTES - FLEXIBLE PIPES

Bc = External pipe diameter
W = Trench width (Bc + 300mm min, Bc + 600 max)

Bedding and sidefill material shall be placed and compacted in layers not exceeding 100mm. Hand tamp the material fully at the sides of the pipe while tamping lightly over the crown.
Continue hand tamping until a finished layer of 300mm has been placed over the pipe.

Subsequent backfilling shall be deposited in layers not exceeding 225mm and fully compacted.

Selected fill should be readily compactible, and should not contain stones larger than 40mm, lumps of clay over 75mm, timber, frozen material, vegetable matter or foreign matter.

Refer to table for specification for granular material.

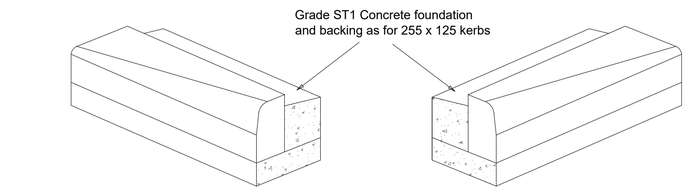
BEDDING AND SIDEFILL MATERIAL FOR RIGID PIPES

Nominal Size of Pipe (mm)	Nominal Max Particle Size (mm)	Class of Bedding	Maximum CF Value	Materials Specified in British Standard
Over 300 to 550	20	S B F	0.15 0.30 0.15	14 - 20mm nominal single-size or 14 - 5mm graded or 20 - 5mm graded
Over 550	20	S B F	0.15 0.30 0.15	14, 20, or 40mm nominal single-size crushed rock or 14 - 5mm graded or 20-5mm graded or 10 - 5mm graded

The Table (A1 from WIS 4-08-02) shows specification for processed granular material. Maximum particle size and compaction fraction must also apply to as-dug material.

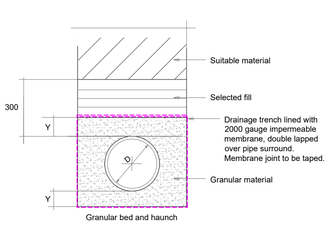
Processed granular material may include aggregates to BS 882, air cooled blast furnace slag to BS 1047 and sintered pulverised fuel ash to BS 3797

As-dug material is excavated material which is suitable for use as bedding and sidefill without processing. It shall not be contaminated with domestic, building or industrial waste and shall be free of organic matter or combustible material.

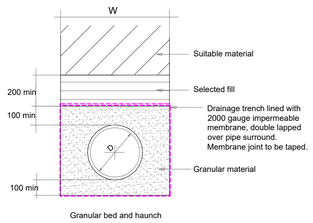


Dropped (Transition) KerbType:
DR1 and DL1 (HB - BN)

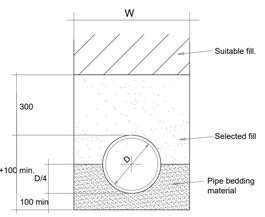
Pollution Protection Detail to Foul Sewer



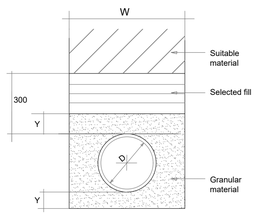
RIGID PIPE BEDDING - CLASS S
with pollution protection Membrane



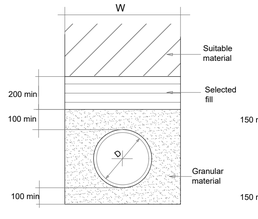
FLEXIBLE PIPE BEDDING - CLASS S
with pollution protection membrane



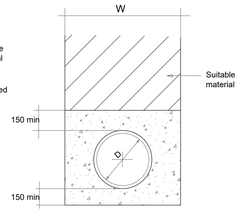
RIGID PIPE BEDDING - CLASS B



RIGID PIPE BEDDING
- CLASS S

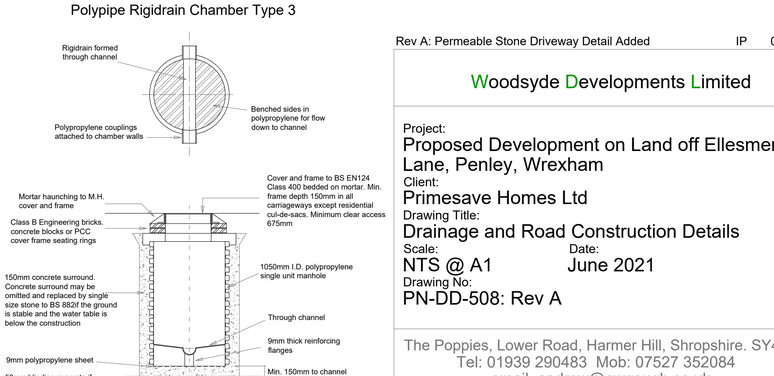


FLEXIBLE PIPE BEDDING
- CLASS S



FLEXIBLE PIPE BEDDING -
CONCRETE BED & SURROUND

Polypipe Rigidrain Chamber Type 3



Rev A: Permeable Stone Driveway Detail Added IP 09.09.21

Woodsyde Developments Limited

Project:
Proposed Development on Land off Ellesmere Lane, Penley, Wrexham
Client:
Primesave Homes Ltd
Drawing Title:
Drainage and Road Construction Details
Scale: NTS @ A1
Date: June 2021
Drawing No:
PN-DD-508: Rev A

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